

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231 www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

01/31/2003

CONNOLLY & HUTZ PO BOX 2207 WILMINGTON, DE 198992207 EXAMINER

KRUSE, DAVID H

ART UNIT CLASS-SUBCLASS

1638 800-300000

DATE MAILED: 01/31/2003

_					
	APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
٠	08/945 144	01/20/1998	MICHEL LEBRUN	RP/PCT	2339

TITLE OF INVENTION: MUTATED 5-ENOL PYRUVYLSHIKIMATE-3-PHOSPHATE SYNTHASE, GENE CODING FOR SAID PROTEIN AND TRANSFORMED PLANTS CONTAINING SAID GENE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300	\$0	\$1300	04/30/2003

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. <u>PROSECUTION ON THE MERITS IS CLOSED.</u> THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN <u>THREE MONTHS</u> FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. <u>THIS STATUTORY PERIOD CANNOT BE EXTENDED</u>. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
- Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- II. PART B FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.
- III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Box ISSUE FEE Commissioner for Patents

Washington, D.C. 20231 (703)746-4000

<u>Fax</u>

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as

indicated unless corrected by maintenance fee notification		rise in Block I, by (a) sp	ecifying a new co	orrespondence addr	ess; and/or (b) indicating a sep	arate "FEE ADDRESS" for
CURRENT CORRESPONDENCE	E ADDRESS (Note: Legibly mar 590 01/31/2003	k-up with any corrections or use l	Block I)	Fee(s) Transmit	e of mailing can only be used for tal. This certificate cannot apers. Each additional paper, s nust have its own certificate of r	be used for any other such as an assignment or
PO BOX 2207 WILMINGTON, D				Certificate of Mailing or Transmission I hereby certify that this Fec(s) Transmittal is being deposited United States Postal Service with sufficient postage for first class r envelope addressed to the Box Issue Fee address above, or being transmitted to the USPTO, on the date indicated below.		
						(Depositor's name)
,						(Signature)
						(Date)
APPLICATION NO.	FILING DATE	FIR	ST NAMED INVEN	TOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/945,144	01/20/1998		MICHEL LEBRU		RP/PCT	2339
TITLE OF INVENTION: TRANSFORMED PLANTS			E-3-PHOSPHATI	E SYNTHASE,	GENE CODING FOR SAID	PROTEIN AND
APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBL	CATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300		\$0	\$1300	04/30/2003
EXAMI	NED	ART UNIT	CLASS-SUBCI	224		
KRUSE, D.	i	1638	800-30000			
☐ "Fee Address" indicati PTO/SB/47; Rev 03-02 of Number is required. 3. ASSIGNEE NAME AND	ence address (or Change of 22) attached. on (or "Fee Address" Indicor more recent) attached. D RESIDENCE DATA TO an assignee is identified by to the USPTO or is being to the user assignee category or cate enclosed:	of Correspondence ication form Use of a Customer D BE PRINTED ON THE below, no assignee data w g submitted under separate (B) RE egories (will not be printe 4b. Pay A cl Pay The	the names of u or agents OR, single firm (ha attorney or age registered pater is listed, no nan PATENT (print cill appear on the ecover. Completic ESIDENCE: (CITY d on the patent) yment of Fee(s): heck in the amoun ment by credit car	patent. Inclusion of on of this form is Not and STATE OR (individual of the fee(s) is end. Form PTO-2038 thereby authorized by	atent attorneys the name of a per a registered set of up to 2 tits. If no name 3 tassignee data is only appropria OT a substitute for filing an assignment of the country o	group entity government
Commissioner for Patents is	requested to apply the Is	•			asly paid issue fee to the applicat	
(Authorized Signature)		(Date)				
NOTE; The Issue Fee another than the applicant; interest as shown by the re	d Publication Fee (if req a registered attorney or cords of the United States	uired) will not be accep agent; or the assignee of s Patent and Trademark O	ted from anyone or other party in office.			
This collection of information obtain or retain a benefit application. Confidentialitiestimated to take 12 minus completed application for case. Any comments on suggestions for reducing Patent and Trademark Off NOT SEND FEES OR Commissioner for Patents, Under the Paperwork Research	y is governed by 35 U.S.6, tes to complete, including m to the USPTO. Time the amount of time you this burden, should be selected by the complete of the compl	C. 122 and 37 CFR 1.34. g gathering, preparing, ar will vary depending upo ou require to complete t ent to the Chief Informat Commerce, Washington, 1S TO THIS ADDRES	This collection is and submitting the on the individual this form and/or ion Officer, U.S. D.C. 20231. DO SS. SEND TO:			
collection of information u	ınless it displays a valid C	OMB control number.		1		



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/945,144	01/20/1998	MICHEL LEBRUN	RP/PCT	2339
7	590 01/31/2003		EXAMINER	
CONNOLLY &			KRUSE, DAVID H	
PO BOX 2207 WILMINGTON, I	DE 198992207		ART UNIT	PAPER NUMBER
,			1638	
			DATE MAILED: 01/31/2003	

Determination of Patent Term Extension under 35 U.S.C. 154 (b) (application filed after June 7, 1995 but prior to May 29, 2000)

The patent term extension is 0 days. Any patent to issue from the above identified application will include an indication of the 0 day extension on the front page.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (http://pair.uspto.gov)

Any questions regarding the patent term extension or adjustment determination should be directed to the Office of Patent Legal Administration at (703)305-1383.



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/945,144	01/20/1998	MICHEL LEBRUN	RP/PCT	2339
7590 01/31/2003			EXAMINER	
CONNOLLY &	HUTZ		KRUSE, DAVID H	
PO BOX 2207 WILMINGTON, I	E 198992207		ART UNIT	PAPER NUMBER
			1638	
			DATE MAILED: 01/31/2003	

Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003; Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: http://www.uspto.gov/main/howtofees.htm.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

	Application No.	Applicant(s)	
Notice of Allowability	08/945,144 Examiner	LEBRUN ET AL. Art Unit	,
•	Examinei	Art Offic	
	David H Kruse	1638	
The MAILING DATE of this communication appear All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI	(OR REMAINS) CLOSEI or other appropriate com GHTS. This application	D in this application. If not include imunication will be mailed in due	ed course. THIS
 This communication is responsive to <u>9 December 2002</u>. The allowed claim(s) is/are <u>42-54</u>, renumbered 1-13. 			
3. The drawings filed on are accepted by the Examine 3. The drawings filed on are accepted by the Examine.	r.		
4. Acknowledgment is made of a claim for foreign priority und) or (f).	
a) All b) Some* c) None of the:	, or	, 5. (.).	
1. ☐ Certified copies of the priority documents have	been received.		
2. Certified copies of the priority documents have	been received in Applica	ation No	
3. Copies of the certified copies of the priority do	cuments have been recei	ved in this national stage applica	tion from the
International Bureau (PCT Rule 17.2(a)).		• .,	
* Certified copies not received:			
5. Acknowledgment is made of a claim for domestic priority un	nder 35 U.S.C. § 119(e) (to a provisional application).	
(a) The translation of the foreign language provisional a	pplication has been rece	ived.	
6. Acknowledgment is made of a claim for domestic priority un	nder 35 U.S.C. §§ 120 ar	nd/or 121.	
Applicant has THREE MONTHS FROM THE "MAILING DATE" of below. Failure to timely comply will result in ABANDONMENT of 7. A SUBSTITUTE OATH OR DECLARATION must be submitted by the complete of	this application. THIS To	HREE-MONTH PERIOD IS NOT EXAMINER'S AMENDMENT or N	EXTENDABLE.
INFORMAL PATENT APPLICATION (PTO-152) which gives reas	on(s) why the dath or de	ciaration is deficient.	
8. CORRECTED DRAWINGS must be submitted.			
(a) including changes required by the Notice of Draftspers	son's Patent Drawing Re	view (PTO-948) attached	
1) 🗌 hereto or 2) 🔲 to Paper No			
(b) including changes required by the proposed drawing of	correction filed, w	hich has been approved by the E	xaminer.
(c) including changes required by the attached Examiner	s Amendment / Commer	nt or in the Office action of Paper	No
Identifying indicia such as the application number (see 37 CFR 1 of each sheet. The drawings should be filed as a separate paper			
9. DEPOSIT OF and/or INFORMATION about the deposit attached Examiner's comment regarding REQUIREMENT FOR T	sit of BIOLOGICAL MA HE DEPOSIT OF BIOLO	ATERIAL must be submitted. N GICAL MATERIAL.	lote the
Attachment(s)			
1 ☐ Notice of References Cited (PTO-892)		e of Informal Patent Application (I	•
3 Notice of Draftperson's Patent Drawing Review (PTO-948)		riew Summary (PTO-413), Paper	No. <u>35</u> .
 5 ☐ Information Disclosure Statements (PTO-1449), Paper No 7 ☐ Examiner's Comment Regarding Requirement for Deposit 		niner's Amendment/Comment niner's Statement of Reasons for A	Allowanco
of Biological Material	8⊠ Exam 9∏ Other		-iiiOwalice
		WILLIAM PER	

Art Unit: 1638

HI

Page 2 #37

EXAMINER'S AMENDMENT

1. An extension of time under 37 CFR § 1.136(a) is required in order to make an examiner's amendment, which places this application in condition for allowance. During a telephone conversation conducted on 8 January 2003, Robert G. McMorrow requested an extension of time for 1 MONTH(S) and authorized the Commissioner to charge Deposit Account No. 03-2775 the required fee of \$110 for this extension and authorized the following examiner's amendment. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 § CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

(thrice amended) A modified <u>plant DNA</u> [nucleic acid] molecule [of plant origin] encoding a [an] <u>modified</u> EPSPS enzyme <u>wherein said enzyme comprises</u> [, the modifications comprising]:

a first amino acid substitution from threonine to isoleucine at the threonine which corresponds to position 102 of the amino acid sequence of SEQ ID NO: 3 [a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPSP sequence]; and

a second amino acid substitution from proline to serine at the proline which corresponds to position 106 of the amino acid sequence of SEQ ID NO: 3 [a second

48

H

Art Unit: 1638

modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence].

Hz

(twice amended) The modified <u>plant DNA</u> [nucleic acid] molecule as claimed in claim (twice amended) The modified <u>plant DNA</u> [nucleic acid] molecule is of maize origin.

At claim 45, line 4, the phrase "nucleic acid" has been replaced with -- modified plant DNA molecule --.

At claim 46, line 3, the phrase "nucleic acid of claim 42" has been replaced with the phrase -- modified plant DNA molecule --.

- (thrice amended) A <u>transformed</u> plant cell comprising a vector comprising the following components, which are operably associated in the direction of transcription:
 - (a) a promoter functional in a plant cell;
 - (b) a nucleic acid encoding a chloroplast transit peptide;
 - (c) a modified <u>DNA</u> [nucleic acid] molecule of maize origin encoding a [an] <u>modified</u> EPSPS enzyme <u>wherein said enzyme comprises</u> [, the modifications comprising]:
 - a first amino acid substitution from threonine to isoleucine at the threonine which

49

#

Art Unit: 1638

corresponds to position 102 of the amino acid sequence of SEQ ID NO: 3 [a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPSP sequence]; and

H3 CONT a second amino acid substitution from proline to serine at the proline which corresponds to position 106 of the amino acid sequence of SEQ ID NO: 3 [a second modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence]; and

(d) an untranslated transcription termination signal region.

At claim 48, line 1, after "monocot", -- plant cell -- has been inserted.

At claim 48, line 2, the phrase "an unmodified" has been replaced with the phrase -- a non-transformed --.

At claim 49, line 1, after "dicot", -- plant cell -- has been inserted.

At claim 49, line 2, the phrase "an unmodified" has been replaced with the phrase -- a non-transformed --.

HY

50

#

^{9 50 (}thrice amended) A transgenic plant comprising a vector comprising the following

Art Unit: 1638

components, which are operably associated in the direction of transcription:

- (a) a promoter functional in a plant cell;
- (b) a nucleic acid encoding a chloroplast transit peptide;
- (c) a modified <u>DNA</u> [nucleic acid] molecule of maize origin encoding a [an] modified EPSPS enzyme wherein said enzyme comprises [, the modifications comprising]:

a first amino acid substitution from threonine to isoleucine at the threonine which corresponds to position 102 of the amino acid sequence of SEQ ID NO: 3 [a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPSP sequence]; and

a second amino acid substitution from proline to serine at the proline which corresponds to position 106 of the amino acid sequence of SEQ ID NO: 3 [a second modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence]; and

(d) an untranslated transcription termination signal region.

At claim 51, line 2, the phrase "an unmodified" has been replaced with the phrase -- a non-transgenic --.

5/

4

thy and

Art Unit: 1638

At claim 52, line 2, the phrase "an unmodified" has been replaced with the phrase -- a non-transgenic --.

1253 (thrice amended) A method for selectively controlling plants which method comprises the steps of:

- a) planting crop seeds or plants which have increased glyphosate tolerance as a result of a chimeric gene being inserted into said crop seeds or plants, said chimeric gene having
 - (i) a promoter region functional in a plant cell; and
- (ii) a <u>modified plant DNA</u> [nucleic acid] molecule [of plant origin] encoding a modified EPSPS enzyme <u>wherein said enzyme comprises</u> [, the modifications comprising]:

a first amino acid substitution from threonine to isoleucine at the threonine which corresponds to position 102 of the amino acid sequence of SEQ ID NO: 3 [a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPSP sequence]; and

a second amino acid substitution from proline to serine at the proline which corresponds to position 106 of the amino acid sequence of SEQ ID NO: 3 [a second modification of a coding sequence that normally encodes a proline that is located,

HS

4

Art Unit: 1638

relative to the gene from which it is derived, at position 106 of the amino acid sequence of the mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence]; and

(iii) an untranslated transcription termination signal region; and

b) applying to said <u>crop seeds or</u> plants a sufficient amount of glyphosate to control [said] untransformed plants without significantly affecting said <u>crop seeds or plants</u> that comprise the chimeric gene.

encoding a [mature] plant EPSPS [protein of plant origin] enzyme having a first amino acid substitution from threonine to isoleucine at the threonine which corresponds to position 102 of the amino acid sequence of SEQ ID NO: 3 [having isoleucine substituted for the threonine that is relatively located at position 102 of the amino acid sequence of SEQ ID NO: 3]; and

a second amino acid substitution from proline to serine at the proline which corresponds to position 106 of the amino acid sequence of SEQ ID NO: 3 [serine substituted for the proline that is relatively located at position 106 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3].

2. The following is an examiner's statement of reasons for allowance: The Declaration of Alan Sailland, filed 9 December 2002, has addressed the issues under 35 U.S.C. § 112, first paragraph, and the Examiner withdraws the outstanding rejections. The statement in the Sailland Declaration on page 2, section 4, provides evidence that other plant EPSPS genes were disclosed and available prior to the filing

H

Art Unit: 1638

date of the instant application, and that the encoded enzymes were conserved in their amino acid sequences at the claimed modifications.

The Examiner has amended the claims for clarity and consistency of language, said amendments are not intended to modify the scope of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (703) 306-4539. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (703) 306-3218. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 308-0196.

Amy Mathematical Amy Mathemati

AMY J. NELSON, PH.D SUPERVISORY PATENT EXAMINER TECHNOLOGY CENTER 1600

David H. Kruse, Ph.D. 8 January 2003



Page 8